

Identification and Mapping of Land Use Classes in
Marion County (Indianapolis), Indiana by
Machine-Processing of ERTS-1 MSS Data

Discipline Category: 2A Land Use Classification
ERTS Frame Number: E-1069-15585, obtained on 30 September 1972
Run Number: 72053602
Classification Serial Number: 0511314804
Subframe Analyzed: Marion County (Indianapolis), Indiana
ERTS Contract Number: NAS5-21773

Four bands (4,5,6,7) of digitized, multispectral data were analyzed by computer processing to obtain a land use classification of the Marion County subframe. Initially, the nonsupervised (cluster) method of classification was used. The 14-cluster, spectral map of the area was used as the base map for choosing training samples by hand for the land use classes. Training samples were obtained for 1) cloud, 2) cloud shadow, 3) single-family residential, 4) older residential, 5) commercial/industrial, 6) "concrete" (appearing primarily as Weir Cook Airport), 7) grassy (open, agricultural) areas, 8) trees, 9) Water I (shallow, northern ends of Geist and Eagle Creek Reservoirs), 10) Water II (intermediate depths of the reservoirs), 11) Water III (southern areas of reservoirs, near the dams), 12) Water IV (ponds and West Fork White River). Classification results were satisfactory, but the following problems ensued: 1) misclassification of data points along reservoir edges as commerce/industry 2) misclassification of numerous, small rural areas as older housing, 3) confusion in areas located between older housing and single-family residential, and 4) the inability to obtain a single spectral class for residential areas dominated by vegetative cover (such points were usually classified as either grassy or trees).

(E73-10680) IDENTIFICATION AND MAPPING
OF LAND USE CLASSES IN MARION COUNTY
(INDIANAPOLIS), INDIANA BY MACHINE
PROCESSING OF ERTS-1 MSS DATA (Purdue

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